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July 6, 1995

EX PARTE OR LATE FILED

By Messenger

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JUL 6 1995
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW
Washington, DC 20554

Re: File No. 3-DSS-P/LA-94; 4-DSS-P/LA-94;
CC Docket No. 92-297, RM-7872, RM-7722
Ex Parte Presentation

Dear Mr. Caton:

Pursuant to Section 1.1204(b)(7) of the Commission's rules, the enclosed materials were delivered on July 3, 1995 to Donna Bethea of the International Bureau by John Peterson of Hughes Communications Galaxy, Inc. ("Hughes"). In addition, on July 4, 1995, Mr. Peterson has an extended telephone conversation with Ms. Bethea about the Spaceway system ground segment, and the enclosed materials formed the basis for that discussion.

An original and four copies of this letter and the accompanying materials are enclosed. The Commission's Public Notice DA 95-663, released April 5, 1995, waived the requirement that these materials be served on the parties to the restricted adjudicative proceeding involving applications in the 27.5-30.0 GHz part of the Ka band. A copy of this letter is being provided to Ms. Bethea.

Respectfully submitted,

John P. Janka

Enclosures

No. of Copies rec'd 0+4
List A B C D E

facsimile communication

SPACEWAY™

HUGHES COMMUNICATIONS
A unit of GM Hughes Electronics

To: DONNA BETHEA

From: JOHN PETERSON

Company: FCC

Subject: SPACEWAY™ BRIEF

Phone: (202) + 739-0728

Phone: (310)364-4840

For transmission problems, call: (310) 364-4842(Terry)

Fax: (202) + 887 - 6126

Fax: (310) 364-4841

Date: 2 JULY 1995

Total Pages: 10
(including cover)

DEAR DONNA,

ATTACHED ARE BRIEFING CHARTS WHICH ADDRESS THE SPACEWAY™ GROUND SEGEMENT SYSTEM ARCHITECTURE.

JOHN PETERSON

SPACEWAY™ SATELLITE SYSTEM GROUND SEGMENT ARCHITECTURE

HUGHES COMMUNICATIONS

3 JULY 1995

PRESENTATION TO THE

FEDERAL COMMUNICATIONS COMMISSION

JULY 3, 1995

NORTH AMERICAN SPACEWAY™ MARKETS

HUGHES
COMMUNICATIONS

3 JULY 1995

- VIDEO PHONE AND TELECONFERENCING
- INTERNET ACCESS / DATA NETWORKS
- DISTANCE LEARNING
- REGIONAL DIRECT TO HOME VIDEO
- HOME SHOPPING

SPACEWAY™ SYSTEM GROUND NETWORK

HUGHES COMMUNICATIONS

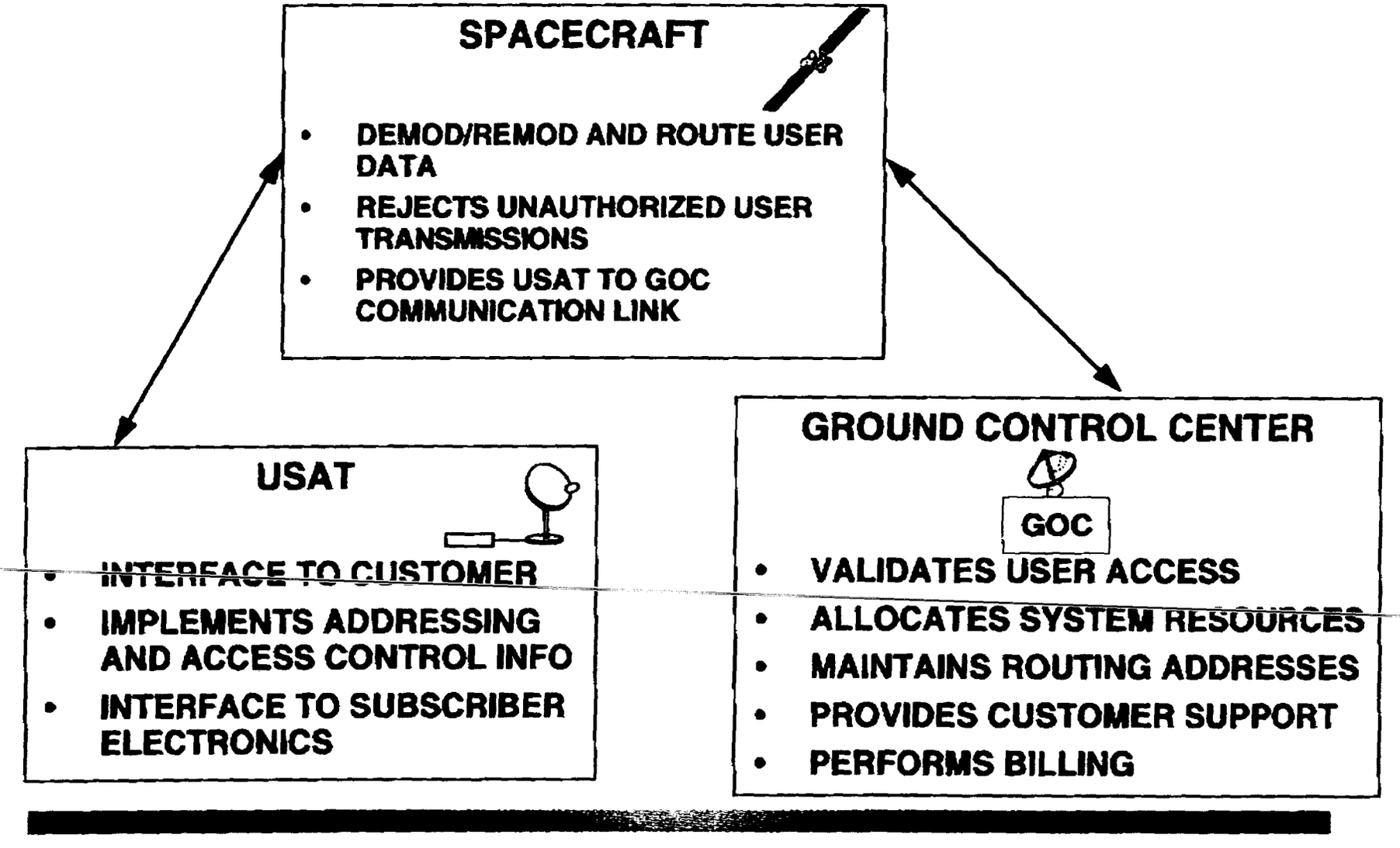
3 JULY 1995

- SPACEWAY™ DESIGN HINGES ON A UBIQUITOUS DEPLOYMENT OF ULTRA SMALL EARTH STATIONS THAT ACCESS THE FULL 1000 MHz OF Ka BAND CAPACITY
- EACH SPACEWAY™ EARTH STATION CAN CONNECT THROUGH THE SATELLITE TO ANY OTHER EARTH STATION POINTED AT THE SAME ORBITAL LOCATION
  - SYSTEM PROVIDES FULL MESH CONNECTIVITY OF ALL USERS
  - NO TERRESTRIAL EARTH STATION "HUBS" OR "GATEWAYS" ARE USED
  - NOT A TYPICAL VSAT SYSTEM WHICH EMPLOYS A SPOKE AND HUB DESIGN WITH LARGE GATEWAY(s) CONNECTING TO THE OUTLYING SMALL TERMINALS
  - THE SATELLITE'S ON BOARD PROCESSOR ACTS AS A "HUB" OR SWITCH IN THE SKY TO DYNAMICALLY ROUTE CALLS TO THE SYSTEM USERS
- SPACEWAY™ SYSTEM PROVIDES BANDWIDTH ON DEMAND INSTEAD OF REQUIRING DEDICATED CIRCUITS BETWEEN USERS
- SPACEWAY™ SUPPORTS CONNECTION TO THE PSTN BUT DOES NOT USE PSTN GATEWAYS
  - CONNECTION TO THE PSTN WILL OCCUR THROUGH THE SAME TYPES OF TERMINALS SOLD TO INDIVIDUAL USERS

SPACEWAY™ FUNCTIONAL DIAGRAM

HUGHES COMMUNICATIONS

3 JULY 1995



SPACEWAY™ EARTH STATIONS

HUGHES COMMUNICATIONS

3 JULY 1995

- SPACEWAY™ SUPPORTS A WIDE RANGE OF DATA RATES FROM BURSTY (POINT OF SALE) TO T1 AND HIGHER
- PRIMARY MARKET WILL BE SUPPORTED THROUGH 66 CM DISHES
  - MAXIMIZES AFFORDABILITY AND MASS MARKETABILITY
  - SUPPORTS ALL DATA RATES UP TO 384 KBPS
- USERS WHO DESIRE ACCESS TO HIGHER DATA RATES (T1) WILL BE ABLE TO USE OPTIONAL 1.2 M DISHES
  - LARGER, 2M DISHES WILL ONLY BE DEPLOYED TO UPLINK 6 MBPS VIDEO DISTRIBUTION SERVICE
    - THIS APPLICATION IS INTENDED ONLY FOR INTERNATIONAL MARKETS, NOT THE U.S. MARKET
  - LARGE TERMINALS MAY ALSO BE MADE AVAILABLE TO PROVIDE IMPROVED AVAILABILITY IN AREAS WHICH EXPERIENCE SIGNIFICANT RAIN FALL

SPACEWAY™ SPOT BEAM DESIGN MAXIMIZES SYSTEM CAPACITY

HUGHES
COMMUNICATIONS

3 JULY 1995

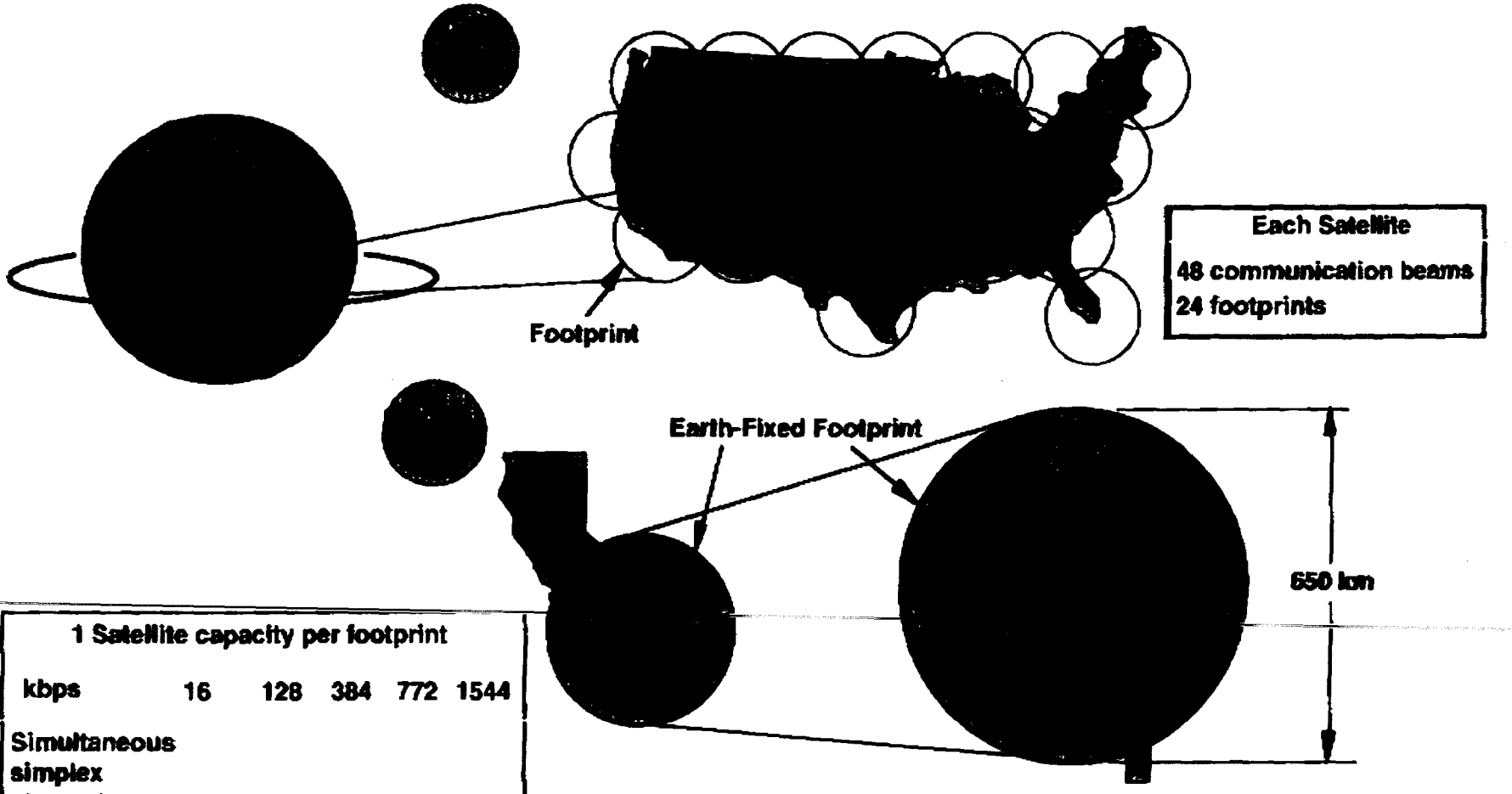
- SPACEWAY™ IS DIFFERENT THAN A TYPICAL CONUS COVERAGE TRANSPONDER SATELLITE
  - 24 DIFFERENT SPOT BEAM FOOTPRINTS PROVIDE COVERAGE OF ALL 50 STATES
  - EACH SPOT BEAM IS APPROXIMATELY 400 MILES IN DIAMETER AND PROVIDES 250 MHz OF CAPACITY
  - SPOT BEAM DESIGN PROVIDES HIGH G/T AND EIRP TO FACILITATE SMALL, LOW COST TERMINALS
  - COMBINED USE OF SPOT BEAMS FOR SPATIAL SEPARATION AND DUAL POLARIZATION PROVIDES 12X FREQUENCY RE-USE
- RESTRICTIONS ON THE USE OF 250 MHz WOULD EFFECTIVELY "CUT" A SPACEWAY™ SPACECRAFT CAPACITY BY ONE HALF
  - THE SPACEWAY™ SYSTEM DOES NOT EMPLOY LARGE GATEWAY TERMINALS

SPACEWAY™

Spot Beam Technology Permits High Frequency Reuse and High System Capacity

HUGHES COMMUNICATIONS

11 January 1995



1 Satellite capacity per footprint					
kbps	16	128	384	772	1544
Simultaneous simplex channels	9,600	1440	480	240	120

M950076-1

CAPACITY & BUSINESS CASE FOR SPACEWAY™

HUGHES COMMUNICATIONS

3 JULY 1995

- **THE SPACEWAY™ CAPACITY AND BUSINESS CASE ARE DIRECTLY PROPORTIONAL TO THE AVAILABLE FREQUENCY BANDWITH**
  - **ACCESS TO 1000 MHz BY ALL TERMINALS IS NECESSARY FOR A VIABLE BUSINESS**
  - **HIGH DATA RATE SERVICES CANNOT BE RESTRICTED TO A PORTION OF THE REQUESTED 1000 MHz**
    - **FUNDAMENTALLY INCONSISTENT WITH SPOT BEAM DESIGN AND WOULD LIMIT CAPACITY FOR STANDARD (66 CM) TERMINALS IN HALF THE UNITED STATES**
  - **FREQUENCIES ARE NOT PREASSIGNED TO ANY GIVEN SERVICE, SUCH AS T1**
  - **FREQUENCIES ARE DYNAMICALLY RE-ASSIGNED TO MAXIMIZE OVERALL SYSTEM CAPACITY**
- **LIMITING CAPACITY AVAILABLE FOR 66 CM TERMINALS MAKES SPACEWAY™ BUSINESS CASE UNWORKABLE BY SIGNIFICANTLY REDUCING PROJECTED REVENUES**

SUMMARY & CONCLUSIONS

HUGHES
COMMUNICATIONS

3 JULY 1995

- **SPACEWAY™ BUSINESS CASE AND ARCHITECTURE REQUIRE ACCESS TO THE FULL 1000 MHz BY ALL SPACEWAY™ TERMINALS (66CM AND LARGER)**
- **SPACEWAY™ ARCHITECTURE IN THE UNITED STATES DOES NOT INCLUDE GATEWAYS INTO THE PSTN**
  - **PSTN CONNECTIVITY IS PROVIDED AT THE LOCAL EXCHANGE BY NORMAL SPACEWAY™ (SMALL) TERMINALS**
- **SPACEWAY™ PROVIDES FULL MESH CONNECTIVITY AMONG ALL USERS AND ALL SIZES OF TERMINALS**
  - **ALL ROUTING IS PERFORMED ON THE SPACECRAFT**
  - **NO TERRESTRIAL HUBS ARE REQUIRED**

RESTRICTING 250 MHz OF THE REQUESTED 1000 MHz TO ACCESS BY GATEWAYS IS UNTENABLE FOR THE SPACEWAY™ UNITED STATES MARKET AND SUPPORTING ARCHITECTURE